

REMARKS

In view of the following discussion, the Applicants submit that none of the claims now pending in the application is obvious under the provisions of 35 U.S.C. § 102. Thus, the Applicants believe that all of these claims are now in allowable form.

I. RESPONSE TO EXAMINER'S ARGUMENTS

Applicants will address the Response to Arguments section of the Final Office Action dated May 5, 2004, below.

Applicants traverse the Examiner's broad interpretation of the term "object configuration". However, Applicants have amended the claims to make it clear what the "object configuration" represents. Therefore, Applicants submit that, in view of the amendment, the Examiner cannot presently read the term "object configuration" in the Applicants claims in the broad manner recited in the office action, Cham et al. cannot anticipate Applicants' claims 1, 9, and 11.

Applicants also traverse the Examiner's finding that Cham et al. teaches "selecting of only certain points by a selection criteria of the starting points or seed points that are stronger to track." Cham teaches selecting "best" modes from probability density $p(x|z)$ based on the set of seed points $\{s_i\}$ and ignoring "weaker" modes based on that set of seed points. (col. 6, lines 31-33) There is no teaching of selecting certain points by a selection criteria as the Examiner argues.

II. REJECTION OF CLAIMS 1-4, 8-14 and 18 UNDER 35 U.S.C. § 102

The Examiner has rejected claims 1-4, 8-14 and 18 in the Office Action as being anticipated by Cham et al. (US patent 65,353,679, issued on March 5, 2002). The Applicants respectfully disagree.

Pending claims 1 and 11 recite:

"1. A method for tracking multiple objects in a video sequence comprising:

Page 6

283107_1.DOC

PATENT

Atty. Dkt. No. SAR 13478

selecting an initial configuration comprising a plurality of objects, where the initial configuration represents an initial relationship among the objects in said plurality of objects;

predicting a current configuration, where the current configuration represents a current relationship among the objects in said plurality of objects;
and

computing a likelihood for the current configuration." [Emphasis added].

"11. A computer readable medium containing a program that, when executed by a processor, causes an image processing system to perform a method comprising:

selecting an initial configuration comprising a plurality of objects, where the initial configuration represents an initial relationship among the objects in said plurality of objects;

predicting a current configuration, where the current configuration represents a current relationship among the objects in said plurality of objects;
and

computing a likelihood for the current configuration." [Emphasis added].

Pending claims 1 and 11 recite selecting an initial configuration comprising a plurality of objects, where the initial configuration represents an initial relationship among the objects in the plurality of objects and predicting a current configuration, where the initial configuration represents an initial relationship among the objects in said plurality of objects, see application, page 5, line 21-22, pages 6-7, and Figure 4. Referring to the subject application, page 3, lines 27-30, a configuration is defined as a group of objects. Thus, predicting the current configuration refers to predicting a current group of objects. The current configuration may be different than the initial configuration. For example, as recited in the subject application beginning on line 26 of page 6, new objects can be introduced, such as by occlusion, and existing objects may be deleted. Claims 1 and 11 further recite computing a likelihood for the current configuration.

Page 7

283107_1.DOC

PATENT

Atty. Dkt. No. SAR 13476

In contrast, Cham et al. does not disclose or suggest selecting an initial configuration of objects. The Examiner's reliance on column 6, lines 16-18 of Cham et al. for doing so is misplaced. There, Cham et al. refers to "hypothesis sampling" to identify not an object or objects, but rather mathematical state space starting points to initiate a prediction for the next frame of data. Such starting values are not an initial configuration of objects.

Consequently, independent claims 1 and 11 are allowable. Furthermore, claims 2-4, 8, 11-14, and 18, which depend from one of those independent claims and which include additional limitations that are also allowable.

Turning now to pending claim 9, that claim recites:

"9. A method of producing probability distributions of states for multiple objects in a video sequence comprising:

performing hierarchical sampling of at least one frame of video in said video sequence, wherein said sampling is performed in an object configuration and individual object states, said object configuration representing a relationship among a plurality of objects within a scene; and

repeating said sampling for each frame of video in said video sequence to track objects within the video sequence." [Emphasis added].

Pending claim 9 recites hierarchical sampling of an object configuration and individual object states. Cham et al. does not teach or disclose either an object configuration or individual object states. Consequently, Cham et al. does not disclose or suggest a hierarchical sampling of an object configuration and individual object states. The Examiner's reliance on column 6, lines 8-18 of Cham et al. for doing so is misplaced. There, Cham et al. refers to updating a likelihood approximation by hypothesis sampling to produce a plurality of state space starting points to initiate prediction for the next frame of data. Subsequently, Cham et al. discloses how that likelihood approximation is updated. Again, those state space starting points are not an object configuration. Furthermore, those state space starting points do not represent an individual object state.

PATENT

Atty. Dkt. No. SAR 13476

As stated previously in section I., in view of the amendments above, the Examiner cannot presently read the term "configuration" of claim 9 in the broad fashion used in the office action. Consequently, the claimed limitations of independent claim 9 as presently constituted are allowable. Claim 10 has been canceled, thus rendering its rejection moot.

In view of the foregoing, Applicants respectfully request withdrawal of the 35 U.S.C. §102(e) rejection of claims 1-4, 8-14, and 18, and reconsideration and allowance of the pending claims.

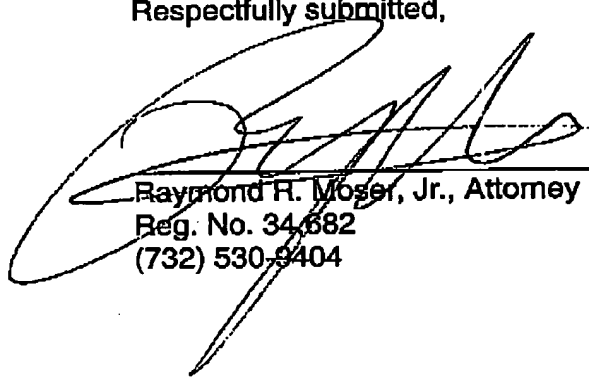
Conclusion

Thus, the Applicant submits that all of these claims now fully satisfy the requirements of 35 U.S.C. §102. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Thomas Bethea, Jr., Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

8-9-04


Raymond R. Moser, Jr., Attorney
Reg. No. 34,682
(732) 530-9404

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
Shrewsbury, New Jersey 07702
(732) 530-9404

Page 9

293107_1.DOC